

CLAIMS

1. A light irradiating unit comprising an LED and a housing into which the LED is incorporated and which has a heat dissipating portion wherein the housing has a first housing element and a second housing element each of which is joined serially along a predetermined axial line, and characterized by further comprising a pressing arrangement that fixes the LED with pressure between a first pressing face arranged at the first housing element side and a second pressing face arranged at the second housing element side accompanied by joining the first and the second housing elements and a positioning arrangement that positions the LED so as to align an optical axis of the LED with the predetermined axial line accompanied by joining the first and the second housing elements.

2. A light irradiating unit comprising an LED and a housing into which the LED is incorporated and which has a heat dissipating portion wherein the housing has a first housing element and a second housing element each of which is joined serially along a predetermined axial line, further comprising a pressing arrangement that fixes the LED with pressure between a first pressing face arranged at the first housing element side and a second pressing face arranged at the second housing element side accompanied by joining the first and the second housing elements and a positioning arrangement that positions the LED so as to align an optical axis of the LED with the predetermined

axial line accompanied by joining the first and the second housing elements,
and characterized by the second housing element comprises a wall and a projecting body projecting from the wall, the LED
5 is mounted on an annular substrate and a second pressing face set at a distal end of the projecting body that penetrates a center hole of the substrate is tightly attached to a bottom face of the LED directly or through a heat conduction member.

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3. A light irradiating unit comprising an LED and a housing into which the LED is incorporated and which has a heat dissipating portion wherein the housing has a first housing element and a second housing element each of which is joined
15 serially along a predetermined axial line, further comprising a pressing arrangement that fixes the LED with pressure between a first pressing face arranged at the first housing element side and a second pressing face arranged at the second housing element side accompanied by
20 joining the first and the second housing elements, a positioning arrangement that positions the LED so as to align an optical axis of the LED with the predetermined axial line accompanied by joining the first and the second housing elements and a lens mechanism that is incorporated
25 into the housing,
and characterized by that the positioning arrangement positions the LED by inserting the LED without a slack into a concave portion arranged on a lens constituting the lens

mechanism.

4. The light irradiating unit described in claim 1, wherein
the LED in an elementary substance can flow electrical
5 current not lower than 200mA through 300mA in a stationary
state.

5. The light irradiating unit described in claim 1, wherein
an elastic member is arranged between at least one of the
10 first and the second pressing faces and the LED.

6. The light irradiating unit described in claim 1, wherein
the positioning arrangement makes use of a ring portion
mounted on the housing and positions the LED by inserting
15 the LED into a center through hole of the ring portion
without a slack accompanied by joining the first housing
element to the second housing element.

7. The light irradiating unit described in claim 6, wherein
20 an inner face of the ring portion is a mirror finished conic
concave face and the ring portion has a function to guide
light forward.

8. The light irradiating unit described in claim 1, wherein
25 the light irradiating unit further comprises a lens
mechanism that is incorporated into the housing and is so
arranged that the light irradiated from the LED is focused
on a light focusing portion arranged at a predetermined

portion in a size of a predetermined radius through the lens mechanism.

9. The light irradiating unit described in claim 8, wherein
5 the lens mechanism comprises a first lens that makes the light irradiated from the LED generally parallel and a second lens that focuses the light from the first lens into the light focusing portion.

10 10. The light irradiating unit described in one of claim 1, wherein the heat dissipating portion is in a shape of a fin arranged on a periphery portion of the housing.

11. The light irradiating unit described in claim 2, wherein
15 the LED in an elementary substance can flow electrical current not lower than 200mA through 300mA in a stationary state.

12. The light irradiating unit described in claim 2, wherein
20 an elastic member is arranged between at least one of the first and the second pressing faces and the LED.

13. The light irradiating unit described in claim 2, wherein
the light irradiating unit further comprises a lens
25 mechanism that is incorporated into the housing and is so arranged that the light irradiated from the LED is focused on a light focusing portion arranged at a predetermined portion in a size of a predetermined radius through the lens

mechanism.

14. The light irradiating unit described in claim 13,
wherein the lens mechanism comprises a first lens that makes
5 the light irradiated from the LED generally parallel and a
second lens that focuses the light from the first lens into
the light focusing portion.

15. The light irradiating unit described in one of claim 2,
10 wherein the heat dissipating portion is in a shape of a fin
arranged on a periphery portion of the housing.

16. The light irradiating unit described in claim 3, wherein
the LED in an elementary substance can flow electrical
15 current not lower than 200mA through 300mA in a stationary
state.

17. The light irradiating unit described in claim 3, wherein
an elastic member is arranged between at least one of the
20 first and the second pressing faces and the LED.

18. The light irradiating unit described in claim 3, wherein
the light irradiating unit further comprises a lens
mechanism that is incorporated into the housing and is so
25 arranged that the light irradiated from the LED is focused
on a light focusing portion arranged at a predetermined
portion in a size of a predetermined radius through the lens
mechanism.

19. The light irradiating unit described in claim 18,
wherein the lens mechanism comprises a first lens that makes
the light irradiated from the LED generally parallel and a
5 second lens that focuses the light from the first lens into
the light focusing portion.

20. The light irradiating unit described in one of claim 3,
wherein the heat dissipating portion is in a shape of a fin
10 arranged on a periphery portion of the housing.